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3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			GRAHAM, ANDREW R	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/740,524	Applicant(s) HALL ET AL.	
	Examiner Andrew Graham	Art Unit 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u>99</u> |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on September 23, 2004 has been considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-2 and 5-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over "3M Headset Intercom System Model C960 Operating Instructions" in view of Ruppert et al (USPN 6236969). Hereafter, "3M Headset Intercom System Model C960 Operating Instructions" will be referred to as "3M" and "Ruppert et al" will be referred to as "Ruppert".

3M discloses a headset communication system for a dual lane food service environment, wherein in one mode of operation a user is able to communicate with two different service lanes from a single headset.

Specifically regarding Claim 1, 3M specifies:

A programmable headset (Page 1, lines 2-3, "Introduction")
comprising:

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a headband (band connected to and adjusted by 15, left figure, Figure 5, page 5, lines 20-24); and

an electronics housing (left figure, Figure 5, casing for circuitry and connectors 1-11) including:

a transmitter ("2-way", page iii, line 3; inherent in "transceiver" of "transceiver housing", page 11, line 7) operably connected to the headset signal processing device (e.g., "microprocessor", page 23, lines 2-3, in further view of Ruppert discussed below);

a receiver ("2-way", page iii, line 3; inherent in "transceiver" of "transceiver housing", page 11, line 7) operably connected to the headset signal processing device (e.g., "microprocessor", page 23, lines 2-3, in further view of Ruppert discussed below);

a user-activated control device ((5,6) page 4, lines 17-18; page 5, lines 2-3) for switching a frequency of the transmitter between at least a first frequency and a second frequency (16 different channels available (page 1, line 4), divided among eight "channel select positions" (page 22, lines 6-8 and Figure 22), two sets of eight being associated one per lane location, factory set for lane 1 (page 20, lines 2-3) but the eight associated with lane 2 can be used, though not in dual lane mode (page 23, lines 15-18) because dual lane requires both channels of each select position, as evidenced by both base stations needing to be set to same channel select position in dual or cross lane mode (page 23, lines 4-5)),

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thereby enabling the headset to switch between communicating with a first lane location using the first frequency and a second lane location using the second frequency (page 20, lines 4-7, in view of above citations).

To be placed in dual lane mode, the headsets must be programmed (page 1, lines 29-36; page 20, lines 8-17; Figure 22)

However, 3m does not specify:

a headset infrared light detector arranged to receive infrared light signals, convert the infrared light signals into electric signals and supply the electric signals to an output, the headset infrared light detector being located in a detector portion of the electronics housing;

a headset signal processing device with an input coupled to the output of the headset infrared light detector for processing the electric signals supplied by the headset infrared light detector;

Ruppert teaches a communication system comprising a headset and a base station with a variety of features, one of which is means to transmit and receive information via both infrared and radio frequency signals. The IR communication interfaces are intended for data transfer between the headset and the base station as well as other devices (col. 6, lines 63-66 and col. 7 lines 13-21). Control signals input through the headset (10) are disclosed as being able to alter the tuning of the RF circuitry as well as effect data transmission over the I/R interface (col. 10, lines 23-32).

Specifically regarding Claim 1, Ruppert discloses:

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a headband (12) (col. 3, lines 56-60); and

an electronics housing (14) (col. 3, lines 58-63) including:

a headset infrared light detector (89) arranged to receive infrared light signals (from 88), convert the infrared light signals into electric signals (inherent for use of infrared signal by standard integrated circuit board implementation of electronics components (30 or 32) (col. 4, lines 60-65)) and supply the electric signals to an output (into 32 or to 97) (col. 7, lines 2-4 and 61-64),

the headset infrared light detector (89) being located in a detector portion (located on the underside of mouthpiece (16) or variety of locations on headset (col. 7, lines 1-12));

a headset signal processing device (32 or combination of 32 and 97) with an input coupled to the output of the headset infrared light detector (89) for processing the electric signals supplied by the headset infrared light detector (89) (col. 7, lines 2-4; col. 10, lines 56-58);

a transmitter (integrated into 30) operably connected to the headset signal processing device (32) (col. 7, lines 23-30);

a receiver (integrated into 30) operably connected to the headset signal processing device (32) (col. 7, lines 23-30);

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to include the IR communication interface of Ruppert into the headset of the applicant's admitted prior art. The motivation behind such a modification would have been that such a port would have enabled additional, frequency independent

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wireless communication to be conducted through the headset along with the radio communications of the system. Such a port would have been particularly useful for two way data transfer between the radio-communications enabled headset and base station of 3M and devices such as a computer, printer, ATM, or other peripheral device. Ruppert also notes an IR transmission scheme that would have enabled secure transmissions to be made.

Regarding **Claim 2**, batteries (40) are included in the headset component (10) of Ruppert (col. 4, lines 49-57). 3M also teaches a battery (10) (page 5, line 11). These teachings read on "a battery attached to the headband and operably connected to the headset signal processing device".

Regarding **Claim 5**, Ruppert discloses that multiple IR ports in various locations may be provided on the device, and the port depicted (88) is located on the bottom of the mouthpiece (16) towards the speaker end of the electronics housing (14) (col. 7, lines 8-11). These teachings read on "the detector portion of the electronics housing is located at an end of the electronics housing".

Regarding **Claim 6**, the IR interface port (89) is illustrated as defined panel on the headset (10) of Ruppert, the construction of such a well-known, infrared-passing component reading on "the detector portion of the headset includes at least a window of infrared transparent material".

Regarding **Claim 7**, the mouthpiece (16) of Ruppert's invention includes a microphone (18) and a speaker (20), which reads on "the

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headband includes a speaker and a microphone" (col. 4, lines 10-12). Ruppert also discloses that electrical connections (28,29,50,60) exist between the electronics housing and such components contained on the headband (col. 4, lines 40-44; col. 5, lines 21-37). These physical contacts and the physical, electricity-conducting paths to which they correspond, such as illustrated for (28), read on "the headband is operably connected coupled to the electronics housing by a wire connection".

Regarding **Claim 8**, the mouthpiece (16) of Ruppert's invention includes a microphone (18) and a speaker (20) and is connected through another electronics housing (14) to the headband (12), which reads on "the electronics housing is attached to the headband and "includes a speaker and a microphone" (col. 4, lines 10-22 and Figure 1). The electronics housing of 3M is also connected to the headset (Figure 5, page 4).

3. Claims 3-4, 9-11, 13-15, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3M in view of Ruppert as applied above, and further in view of Takahashi et al (USPN 6525854). Hereafter, "Takahashi et al" will be referred to as "Takahashi".

As detailed above, 3M discloses a headset communication system for a dual lane food service environment, wherein in one mode of operation a user is able to communicate with two lanes from a single headset. Ruppert discloses a communication system comprising a

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headset and a base station, along with the means to transmit and receive information via both infrared and radio frequency signals.

Specifically regarding Claim 3, Figure 3 of Ruppert illustrates the base unit (70), which includes a support recess (81) that reads on "a cradle for receiving the detector portion of the headset" (col. 6, lines 27-41). This base unit (70) includes a serial interface jack (86), through which an attached computer may provide and receive serial data (col. 6, lines 60-63). 3M discloses the programming of the headset through the use of a base station and programming cable (page 3; page 22, Figure 22). The combination of a base unit (70) and a computer of Ruppert, in view of the particular programming functions included on the base station of the system of 3M, collectively reads on "a programming unit". The base unit (70) of Ruppert includes the circuitry for issuing broadcast communications over the IR band as well as transmit serial data to the headset (10) (col. 6, lines 63-64 and col. 10, lines 54-63). A signal transmission is also implied by the transfer of settings from the base unit to the headset of 3M (page 23, lines 6-13). The circuitry for executing such data transfers based on various inputs reads on "a programming unit signal processing device with an output". The components of the infrared port (88) of the base unit (70), in view of variously positioned headset IR ports and the data transfer functions of 3M and Ruppert, read on "a programming unit infrared light emitter" that is "operably connected to the output of the programming unit signal processing device" (col. 6, lines 64-66; Figure 3, both of Ruppert).

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As can be seen in Figure 3 of Ruppert, the IR port (88) of the base station (70) is located within the support recess (81). Ruppert also discloses that the IR ports of the headset may numerous and variously be positioned (col. 7, lines 8-11).

However, 3M in view of Ruppert does not clearly specify:

- that the infrared light emitter is positioned for infrared light communication with the headset light detector when the detector portion is positioned in the cradle

Takahashi teaches a portable radio communication device with an infrared communication function that enables wireless data transmission.

Specifically regarding Claim 3, Takahashi discloses:

infrared light emitter (21B) positioned for infrared light communication with the headset light detector (10A) when the detector portion is positioned in the cradle (col. 7, lines 9-10; col. 8, lines 16-17 and 40-52; col. 9, lines 41-48)

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to align the IR ports in the headset and cradle of 3M in view of Ruppert in a manner that would have enabled IR communication while the headset is positioned in the cradle, as is disclosed by Takahashi. The motivation behind such a modification would have been that such an arrangement would have enabled IR communication to take place between the cradle and headset when operating conditions for the headset allow the headset to be

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placed in the cradle. Such operating conditions would have included charging of the battery, as suggested by Ruppert, hands-free operation of the radio telephone, as suggested and enabled by Takahashi, or while the headset is being stored or otherwise not in use, as would have been recognized by one of ordinary skill in the art.

Regarding **Claim 4**, the IR ports (88,89) of Ruppert are described as enabling full duplex communication between the headset (10) and other data transmission devices, along with the communications between the headset (10) and base unit (70) (col. 7, lines 16-21 and col. 10, lines 26-34 and 54-59). The components necessary to conduct the two way communication between the headset (10) and base unit (70) read on "a headset infrared light emitter operably connected to an output of the headset signal processing unit" and "a programming unit infrared light detector" arranged to received, convert, and output electrical versions of infrared signals. Takahashi particularly illustrates a mobile telephone IR emitter (10B) and an cradle IR receiving element (21A) (col. 7, lines 47-50; col. 8, lines 11-16).

Regarding **Claim 9**, please refer above to the rejections of the similar limitations of Claims 1, 3, and 8.

Regarding **Claim 10**, Ruppert discloses that serial data is passed through the base unit (70) by the infrared port (88), wherein the serial data is obtained through a serial data port (86) from a data source such as a computer (col. 6, lines 60-63). The base unit (70) also includes a telephone jack (85) for integration of the invention into a conventional telephone system. Computers and conventional

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telephone devices are well known in the art to include physical input consoles or controls. These outside components as well as their physical connection to the interface circuitry of the base unit (70) read on "further comprising a base unit connected to the programming unit, the base unit comprising a control panel".

Regarding **Claim 11**, the base unit (70) of Ruppert includes volume control switches (76,77), as does the base station of 3M among other controls, which reads on "the programming unit further comprises a control panel" (col. 6, lines 20-22 of Ruppert; pages 22-23 and Figure 21-23 of 3M).

Regarding **Claim 13**, please refer to the like teachings of Claim 5. Regarding **Claim 14**, please refer to the like teachings of Claim 6, further noting the window (17) of the mobile telephone device taught by Takahashi (col. 7, lines 65-67; col. 8, lines 1-3).

Regarding **Claim 15**, interface ports (88,89) are each shown as specific panels in the headset (10) and support recess (81) of the base unit (70) of Ruppert. Considering the implementations of IR diodes and photodetectors for IR communication interfaces that are standard, and well-known in the art, these IR interface ports and the housings in which they are situated are considered to read on "a programming unit housing at least partially enclosing the programming unit infrared light emitter and the programming unit signal processing device" and "at least a portion of the cradle comprises an infrared light transparent material". Please also note the implementations of

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the IR transceivers and enclosures of the system of Takahashi, shown in particularly Figures 1-2 and 4-5.

Regarding **Claim 18**, please refer to the like teachings of Claim 1. Regarding **Claim 19**, please refer to the like teachings of Claim 4.

Regarding **Claim 20**, please refer to the like teachings of Claims 1 and 3, noting that the IR ports enable communication to be conducted between two headset units and that the data transmitted between the base unit (70) and headset (10) enables the headset of Ruppert to be powered up from a standby mode, as well as carry password information for security purposes. It is this active communication, powering up capability, and security information transfer that is considered to read on "information regarding operation settings of the headset" and "establishing operation settings of the headset in response to the signal". 3M also discloses the transmission of programming data (pages 22,23).

4. **Claim 12** is rejected under 35 U.S.C. 103 (a) as being unpatentable over 3M in view of Ruppert and Takahashi as applied above, and in further view of well known prior art.

As detailed above, 3M discloses a headset communication system for a dual lane food service environment, wherein in one mode of operation a user is able to communicate with two lanes from a single headset. Ruppert discloses a communication system comprising a headset and a base station, along with the means to transmit and receive information via both infrared and radio frequency signals.

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Takahashi discloses a radio telecommunications device with included infrared communications components for data transfer.

3M in view of Ruppert and Takahashi does not disclose:

- that the base unit, or programming unit, is wall mountable

However, the Examiner takes Official Notice that the concept of mounting the base unit of a portable communications device is substantially well known in the art. The base unit of a portable telephones is one particular component of a communication device that is specifically well-known in the art to be wall mountable.

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to make the base unit of the invention of 3M in view of Ruppert and Takahashi to be wall mountable, as is well known art. The motivation behind such a modification would have been the space-saving advantages of a unit that mounts to a wall as opposed to one that sits on a shelf, countertop, or other horizontal surface. Telephone connections are also commonly built into the walls of houses and other shelter-type structures, and mounting the base of a communications device on the same or nearby wall would have minimized the amount of wire needed to properly connect the communication device as well as limited the physical exposure of the connection wire.

5. **Claims 16 and 17** are rejected under 35 U.S.C. 103 (a) as being unpatentable over 3M in view of Ruppert and Takahashi as applied above, and in further view of Rice (USPN 5347387).

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As detailed above, 3M discloses a headset communication system for a dual lane food service environment, wherein in one mode of operation a user is able to communicate with two lanes from a single headset. Ruppert discloses a communication system comprising a headset and a base station, along with the means to transmit and receive information via both infrared and radio frequency signals. Takahashi discloses a radio telecommunications device with included infrared communications components for data transfer. Figures 1 and 3 of Ruppert illustrate embodiments with IR ports (88,89) for the headset and base station. These ports are depicted as involving a defined part of the surfaces of the respective devices. Ruppert also discloses that the IR port (89) may be variously placed and included in multiple numbers, in order to provide a communications interface with a plurality of devices (col. 7, lines 8-21).

3M in view of Ruppert and Takahashi does not disclose:

- that the cradle is entirely composed of a infrared transparent material

Rice discloses an optical transceiver. The motors (11,12,1) of the transceiver enables the optical axis of the transceiver to be steered in any direction establishing a full surround alignment capability(col. 11, lines 58-60; col. 12, lines 3-10 and 64-67). The internal transceiver circuitry is protected by a transparent polycarbonate spherical shell (7) (col. 12, lines 51-58). The complete three dimensional nature of this shell (7), in view of Ruppert's positioning of the IR interface (88) in the base (70) at

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least reads on "the cradle consists of an infrared light transparent material".

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to make the cradle of 3M in view of Ruppert and Takahashi out of a transparent material as is taught in regards to the transceiver portion of the invention of Rice. The motivation behind such a modification would have been based on the benefits that such a larger transparent interface surface would have provided for the communication device of 3M in view of Ruppert and Takhashi, including but not limited to, the increase range of signal transmission as well as an improvement in the ability to communicate with the multiple interface ports in the various locations as proposed for the headset device of Ruppert. IR communication is well known in the art to be a line-of-sight type of communication; providing a greater degree of transparent surface in the housing containing an IR transceiver would have enabled a greater number of angles for the transmission and reception of IR signals, which would have corresponded to a greater number of IR components in the headset or cradle, as well as a greater degree of proper alignment between the headset and cradle.

Regarding **Claim 17**, as discussed in regards to Claim 16, Rice teaches the concept of wide range receiver with a spherical, transparent cover (7). These teachings make obvious the concept of providing a full range, transparent cover for devices comprising infrared transceivers, such as the cradles of both Ruppert and

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Takhashi. In view of the limitations of the parent claims of Claims 9 and 16, this reads on "the programming unit housing consists of an infrared light transparent material".

6. **Claims 21 and 22** are rejected under 35 U.S.C. 103 (a) as being unpatentable over 3M in view of Ruppert and Takahashi as applied above, and in further view of Lee et al (USPN 5247380). Hereafter, "Lee et al" will simply be referred to as "Lee".

As detailed above, 3M discloses a headset communication system for a dual lane food service environment, wherein in one mode of operation a user is able to communicate with two lanes from a single headset. Ruppert discloses a communication system comprising a headset and a base station, along with the means to transmit and receive information via both infrared and radio frequency signals. As discussed above, Ruppert discloses that the base station is able to alter the operation settings of the headset. Takahashi discloses a radio telecommunications device with included infrared communications components for data transfer. Specifically, the headset of Ruppert can be awakened from a standby mode depending on selected transmission protocols (col. 10, lines 59-61).

While a valid communication link between these two devices is required for the control signal to be sent, 3M in view of Ruppert and Takahashi does not disclose:

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the indicating of a ready condition for receiving programming signals through sending an infrared signal from the headset to the programming station

Lee discloses an infrared communications network for ensuring connection and error free transmission between the devices in the network. As can be seen in Figure 1A, each transmission interface device in the network (24,26,30) includes a transmitter and receiver. Figures 4A-8 illustrate the process flow of the invention. Figure 4C illustrates the manner in which baton packets are transmitted to determine if components are responsive and are thus in service (col. 10, lines 24-48). The affirmative or responsive condition of an transmission interface device reads on "indicating a ready condition for receiving a programming signal of the headset by transmitting an infrared light signal from a headset IR detector emitter to a programming station IR detection emitter".

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to include the handshake protocol for determining the connected devices in the system of Lee into the infrared communications protocols of the invention of 3M in view of Ruppert and Takahashi. The motivation behind such a modification would have been that such a communication procedure would reliably and continuously determined the connection status of the devices in the communication network of the invention of 3M in view of Ruppert and Takahashi. The teachings of Lee also enables more than two devices to be connected and configured in the same system.

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Regarding **Claim 22**, the condition of a node in the teachings of Lee as being responsive to a baton packet involves the nodes being 'on' in some manner. Ruppert discloses that the base station includes the ability to awake the headset from a standby condition in response to a transmission (col. 10, lines 59-61). The positive application of battery power to a transceiver and corresponding signal processing circuitry in a node device such as a headset, corresponds to a such an "on" condition and is inherently required for the above responses to occur. Such a property reads on, "the step of indicating a ready condition further comprises turning the headset on".

Response to Arguments

Applicant's arguments filed September 13, 2004 have been fully considered but they are considered moot in view of the new grounds of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Operating Instructions for Models COM900BP and COM400CC HM Electronics, Inc. transceivers teach that Dual Lane communications are based on the use of pairs of transmit and receive frequencies for each numbered communication channel, and include a "lane switch" for alternating between the two pairs of communication frequencies.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Graham

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whose telephone number is 703-308-6729. The examiner can normally be reached on Monday-Friday, 8:30 AM to 5:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ag

Andrew Graham
Examiner
A.U. 2644

ag
November 29, 2004

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XU MEI
PRIMARY EXAMINER